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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/716,603	11/20/2000	Robert D. Barnes	GEMS:0131/yod 15-IS-5887	1553
7590	05/05/2004		EXAMINER	
Patrick S. Yoder Fletcher, Yoder & Van Someren P.O. Box 692289 Houston, TX 77269-2289			JOHNSON, TIMOTHY M	
			ART UNIT	PAPER NUMBER
			2625	
DATE MAILED: 05/05/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/716,603

Applicant(s)

BARNES ET AL.

Examiner

Timothy M Johnson

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– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-55 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-55 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Part III Detailed Action

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 2-9, 11, 13-24, 27-32, 34-36, 45-46, 48-52, and 54-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guetz, 6,091,777, in view of Zandi et al., 5,867,602.

For claim 2, decomposing image data into sets using wavelet decomposition is provided by Guetz in at least the abstract. Guetz does not explicitly provide for a lossless wavelet decomposition, but a lossless wavelet decomposition is conventional and well known and is provided by Zandi in at least the title and abstract by having a wavelet transformation with exact reconstruction, and is therefore lossless. It would've been obvious to one having ordinary skill in the art at the time the invention was made to use a lossless wavelet transform with Guetz, since doing so provides for exact reconstruction. Compressing the sets using lossless compression is provided by Guetz in at least the paragraph bridging cols. 9-10. Compiling a data stream comprising the compressed sets arranged sequentially in a desired order based on the decomposition

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is provided by Guetz in at least the abstract, the last full paragraph in c. 5, the paragraph bridging cols. 6-7, the first two full paragraphs in c. 9, c. 13, lines 32-40, and c. 17, lines 26-35.

For claim 3, lossless integer wavelet decomposition is provided by Zandi in at least the title and abstract.

For claim 4, selectively transmitting at least a portion of the data stream, the portion being determined based on user viewing capabilities is provided by Guetz in at least the abstract, penultimate full paragraph in c. 4, second full paragraph in c. 5, the paragraph bridging cols. 5-6, the last full paragraph in c. 6, the paragraph bridging cols. 6-7, the first two full paragraphs in c. 9, c. 12, lines 34-48.

For claim 5, wherein the data stream comprises a header, the header comprising a qty of the data sets is not explicitly provided by Guetz, but is considered provided by Zandi in at least c. 37, lines 33-42, and the paragraph bridging cols. 41-42, is provided by the width, height, bits per pixel, and a number of bits in coded information. It would've been obvious to one having ordinary skill in the art at the time the invention was made to use a header to indicate how to decompress information, since this is conventionally used, since not all information can usually be pure coded data, and because using the information of Zandi, provides for the capability of more advanced compression and decompression of the image.

For claim 6, the desired order comprising an order of increasing resolution is provided by Guetz as noted above for at least claim 2.

For claim 7, storing the data stream is provided by Guetz in at least the third full paragraph in c. 4, and further by Zandi in at least Fig. 13, block 1309.

For claim 8, wherein the data sets correspond to resolution levels is provided by Guetz as noted above for at least claim 2.

For claim 9, wherein decomposing comprises creating hierarchical subbands comprising a low frequency and high frequency components at a resolution level and further decomposing the low frequency component of the resolution level to form a next lower resolution level until a desired smallest resolution level is reached, each set corresponding to a respective resolution level, each set comprising a low frequency and high frequency components at the respective resolution level is at least mostly provided by Guetz in at least c. 11, line 30 – c. 12, line 10. Guetz is silent with respect to further decomposing the low frequency component to produce further levels. While this is the most common way to produce further levels, Guetz is silent. In any case, for the conventionality of this, see at least Figs. 3A, 5D, 7, and 9 of Zandi illustrating this conventional and well known process. Note that h_0 is a low pass filter as indicated in c. 8, lines 32-40, and as shown in Figs. 3A and 7, for example. It would've been obvious to one having ordinary skill in the art at the time the invention was made to further

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decompose the low frequency using the wavelet transform of Zandi, since Zandi provides for efficient computation filters, because low frequency information is generally more important than high frequency information, and where the decomposition of Guetz can also be provided by using the low frequency component, since Guetz is merely silent.

For claim 11, wherein the act of compressing the sets comprises dividing the sets into subregions to be individually compressed is not explicitly provided by Guetz, but is provided by Zandi in at least c. 46, line 40 – c. 47, line 8. It would've been obvious to one having ordinary skill in the art at the time the invention was made to provide for compressing subregions, since it is advantageous to adaptively compress different regions to different qualities as desired or as needed.

For claim 13, see the rejection of at least claim 2 above, where, in Guetz, the users can explicitly choose the levels and layers, or “viewport” as to how they want or can view the image based on receiver/decoder resources. Furthermore, see also Zandi in at least c. 46, line 40 – c. 47, line 8.

For claim 14, the user view port comprises a resolution level is provided by Guetz where cited above for at least claim 2 and 4, and Zandi where cited above, where at least a resolution level is selected as a “viewport”.

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For claim 15, see the rejection of at least claim 2.

For claim 16, see the rejection of at least claim 2, where it is clear from Guetz that the receiver/client decoder will take only resolutions up to the capacity of the receiver capability and/or user desire.

For claim 17, the user viewport comprises a workstation is provided by the "client users" in a network environment, e.g. inter or intranets including LANs or WANs (abstract of Guetz), and is therefore a "workstation", which is basically the definition of such.

For claim 18, see the rejection of at least claim 3.

For claim 19, the series is ordered sequentially opposite the order of generation of the data sets during lossless wavelet decomposition is provided by at least Guetz in at least c. 11, line 20 – c. 12, line 10, and c. 12, lines 34-68, and as noted above for claim 2, where the lowest layer generated last is ordered oppositely.

For claim 20, wherein the act of determining a parameter of a user view port comprises acquiring a resolution from the client is provided by Guetz where cited above for claim 2.

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For claim 21, transmitting over a network is provided by Guetz in at least the abstract.

For claim 22, see the rejection of at least claims 2 and 7.

For claim 23, see the rejection of at least claim 3.

For claim 24, see the rejection of at least claim 9.

For claim 27, see the rejection of at least claim 2.

For claim 28, see the rejection of at least claim 16.

For claim 29, see the rejection of at least claim 2.

For claim 30, see the rejection of at least claims 2 and 7. A "file" is considered provided by Guetz, since the compressed data must be distinguished in the computer network for decoding at the client workstation, and further it would've been obvious to one having ordinary skill in the art at the time the invention was made to understand that a file is provided, since Zandi explicitly uses this term with respect to the compressed data in at least the paragraph bridging cols. 46-47, and can be used in the computer system of Guetz.

For claim 31, see the rejection of at least claim 2.

For claim 32, see the rejection of at least claim 2 and the resolution levels of Zandi as well, e.g. Figs. 5D – 9.

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For claim 34, see the rejection of at least claim 5 and Figs. 24A-B, where, as the name implies, the header is located before the decomposed and compressed data.

For claim 35, see the rejection of at least claim 14.

For claim 36, see the rejection of at least claims 2 and 7, and a compression interface is clearly provided by Guetz in a computer system CODEC interface.

For claim 45, see the rejection of at least claim 3.

For claim 46, see the rejection of at least claim 9.

For claim 48, see the rejection of at least claims 2 and 4.

For claim 49, see the rejection of at least claim 2, and where the system of Guetz is preferably implemented in software for example.

For claim 50, see the rejection of at least claims 2 and 4.

For claim 51, see the rejection of at least claim 3.

For claim 52, see the rejection of at least claim 9.

For claim 54, see the rejection of at least claim 7 and 30.

For claim 55, see the rejection of at least claim 5.

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3. Claims 10, 25, 33, 47, and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guetz, 6,091,777, and Zandi et al., 5,867,602, as applied to claims above, and further in view of Liang, 6,445,823.

For claim 10, wherein the act of compressing the sets comprises the high frequency components using actual values and compressing the low frequency component at the desired smallest resolution level using prediction errors is not explicitly provided by Guetz, but is conventional and well known and is provided by Liang in at least the paragraph bridging cols. 7-8 and the third full paragraph in c. 9, by optionally using predictive error coding at the low frequency smallest resolution level. Guetz provides for compressing the actual values of the high frequency components except for the low frequency component, as does Liang. It would've been obvious to one having ordinary skill in the art at the time the invention was made to use predictive error coding of the smallest set, since this provides for further compression.

For claim 25, see the rejection of at least claim 10.

For claim 33, see the rejection of at least claim 10.

For claim 47, see the rejection of at least claim 10.

For claim 53, see the rejection of at least claim 10.

4. Claims 12 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guetz, 6,091,777, and Zandi et al., 5,867,602, as applied to claims above, and further in view of Zeng, 2002/0003906.

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For claim 12, wherein the act of compressing the sets comprises selecting a compression algorithm for each subregion based on an entropy of each subregion is not explicitly provided by Guetz or Zandi, but is well known and conventional and is provided by Zeng in at least paragraphs 0030 – 0033 on page 3. It would've been obvious to one having ordinary skill in the art at the time the invention was made to select each subregion based on entropy, since this provides for the optimal wavelet transformation.

For claim 26, see the rejection of at least claim 12.

5. Claims 37-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guetz, 6,091,777, and Zandi et al., 5,867,602, as applied to claims above, and further in view of Cooke, Jr. et al. 6,574,629.

For claims 37-44, the conventional and well known medical imaging systems are not explicitly provided by Guetz or Zandi; however, Zandi does explicitly mention that the invention is well suited for medical imaging systems in at least the penultimate full paragraph in c. 47 for superior lossless compression. Cooke provides for the conventionality of the well known medical modalities in at least the last full paragraph in c. 33 and the paragraph bridging cols. 33-34, to include the claimed PACS (claim 37); one or more imaging systems as provided as follows and as already noted provided by at least Zandi (claim 38); MRI (claim 39); CT (claim 40); PET (claim 41); RF (claim 42); CR (claim 43); and US (claim 44). It would've been obvious to one having ordinary skill

in the art at the time the invention was made to use a plurality of different modalities, since this provides for the advantage of a variety of medical image data inputs, where Zandi provides for superior lossless compression, and where Cooke notes that the list is "not meant to be exhaustive".

Response to Amendment

6. Applicant's arguments filed March 29, 2004 have been fully considered but they are not persuasive.

The Applicant argues the following on pages 12-15 of the amendment:

1. That the "Examiner submitted first that all of the elements of claim 1 can be found in or are suggested by these references".

2. That Guetz does not provide for lossless decomposition.

3. That Guetz does not provide for lossless compression.

4. That the references cannot be combined, since imposing the lossless decomposition of Zandi on Guetz is inconsistent with Guetz.

5. That Zandi assembles the stream before compression.

The Examiner respectfully disagrees:

1. Claim 1 has been cancelled. Applicant is arguing the independent claims, i.e. 2, 13, 22, 30, 36, and 49, which are all similar.

2. As set forth in the rejection above under 35 USC 103, the Examiner admits that Guetz does not explicitly provide for a lossless decomposition. Guetz is merely silent. Maybe a lossless decomposition is provided by Guetz, but we do not know for

sure. However, Guetz is also silent as to the decomposition being lossy also. Thus, Guetz also does not explicitly provide for a lossy decomposition. Zandi explicitly provides for a lossless decomposition as is well known in the art, and is the basis for the rejection under 35 USC 103.

3. Guetz explicitly teaches lossless compression in the paragraph bridging cols. 9-10. So also does Zandi in at least block 104 in Fig. 1.

4. In addition to the fact that references do not have to be physically combined – In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). See also In re Sneed, 710 F.2d 1544, 1550, 218 USPQ 385, 389 (Fed. Cir. 1983); and In re Nievelt, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973) – there is simply no reason why Guetz cannot use the well known decomposition of Zandi, physically or not. As noted above for point 2, Guetz is merely silent with respect to the decomposition process being lossless or lossy. It is also clear that the advantage to using a lossless decomposition is that it is lossless, and further because Zandi's lossless decomposition is also "efficient and lends itself quite well to lossless compression". Therefore, since there are clear advantages to using a lossless decomposition, such as that of Zandi, and because Guetz already provide for a decomposition, there are no inconsistencies as argued by Applicant.

5. Zandi is not relied upon for assembling the stream before compression. As noted above, Zandi is relied upon for the explicit teaching of a lossless decomposition. Even so, Zandi also outputs a data stream arranged sequentially in a desired order also in addition to Guetz.

Final

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Contact Information

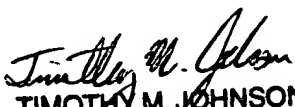
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy M Johnson whose telephone number is 703-306-3096. The examiner can normally be reached on Monday – Friday from 5:30 to 2:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh M. Mehta, can be reached on Monday – Friday from 9:30 to 5:00. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Timothy M. Johnson
Patent Examiner
Art Unit 2625
April 26, 2004


TIMOTHY M. JOHNSON
PRIMARY EXAMINER